

THE AMERICAN PERFUMER AND ESSENTIAL OIL REVIEW

ONE DOLLAR A YEAR.
TEN CENTS A COPY.

NEW YORK, OCTOBER, 1909.

Vol. IV, No. 8.

THE AMERICAN PERFUMER
and ESSENTIAL OIL REVIEW
PUBLISHED MONTHLY.
THE PERFUMER PUBLISHING COMPANY
100 William Street.

LOUIS SPENCER LEVY, President and Treasurer.
JOSEPH S. MENLINE, Secretary, 135 Broadway.
100 William St., New York.
Entered as Second-class Matter March 22d, 1907, at the Post Office
at New York, N. Y., Under the Act of Congress of March 3d, 1879.

TERMS OF SUBSCRIPTION
The United States and Canada, - - \$1.00 Per Annum
Foreign, - - - - - 2.00 "

Subscriptions payable invariably in advance, by check, money-order, or postal-note, to order of THE PERFUMER PUBLISHING COMPANY.

Advertising Rates on Application.

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WE invite correspondence and special articles upon subjects of interest to all engaged in the manufacture and sale of Perfumes, Soaps, Toilet Articles, Flavoring Extracts, etc. THE AMERICAN PERFUMER and ESSENTIAL OIL REVIEW is the OPEN Forum for each and all in the Trade.

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TARIFF MATTERS.

As pointed out in our August issue artificial musk, heliotropin and thymol are now dutiable at 55 cents per pound, instead of 25 per cent. ad valorem, as heretofore.

Our warning seems to have fallen on deaf ears in certain quarters, for surprise was expressed by several who were called upon to pay the higher rate. The foreign market prices of these articles are less than \$2.20 per pound, and for that reason the specific rate is assessed.

On the 18th inst. the Customs Division of the Treasury Department ruled that "cans, boxes, packages and other containers of all kinds," covered by paragraph 195 of the tariff act, shall pay duty according to the contents. If the contents come in free of duty the containers shall be entered free; if the article be dutiable ad valorem the container shall pay a like ad valorem duty, but if the duty on the article be specific, then the container shall be dutiable at 35 per cent. ad valorem. The ruling was made on a question raised by William Loeb, Jr., Collector at the Port of New York.

ORANGE OIL.—On the 15th ult. we addressed the Secretary of the Treasury, as reported in our September issue, and received the following reply:

"In reply to your letter of the 15th inst., I have to inform you that orange oil imported into this country will probably be assessed with duty under paragraph 3, of the tariff act of August 5, 1909, at 25 per cent. ad valorem.

"Respectfully,

"C. D. NORTON,
"Acting Secretary."

Up to the present time we have had no further information, though we have asked whether a definite decision has been reached.

THE FORMULA QUESTION.

Among engineers the man who is prone to consult his handbook of formulas on any and every occasion is dubbed a handbook engineer, and, needless to say, the term is not employed in a complimentary sense.

Such "engineers" can solve a problem to a nicety provided the formula fits the case, and they are certain that its application is correct under the circumstances; but where doubt is raised, or when the handbook is mislaid, they are like the amateur sailor whose seafaring experience had been gained chiefly as Commodore of the rocking-chair fleet, who ordered the anchor cast before lowering sail, because in a moment of inattention the wind had turned a page in his navigating book.

The charge has been made that there are perfumers and perfumery "chemists" that are in a manner comparable to the "hand-book engineer" and for the reason that their knowledge of essential oils and other raw materials is so limited they are at the mercy of the hand-book of formulas. Among the many manufacturers of perfumes and toilet preparations in this country, there are a number of men that have had a good chemical training and wide experience, who are competent to pass fairly good judgment on the quality of raw materials they buy, and who are also competent to select the materials and to blend them properly, either with a view to the best possible finished result, or to meet certain cost conditions.

A large percentage of the remainder, however, have no such technical training or experience to endow them with similar qualifications, and as a result they are dependent on meager information gleaned from insufficient text books, and from formulas and working processes given to them by producers of and dealers in raw materials.

These producers and agents are in many cases skilled chemists with good odor-judgment, and have experience in the proper manipulation of materials, but principally of their own brand; and it is therefore to be expected that the information they furnish is often of a biased nature, although it may, nevertheless, still be of some value to the manufacturer.

However, in view of the fact that the manufacturer is called upon to exercise discrimination when offered synthetics, some of which are fortified with natural essential oils, and some so-called natural products that are fortified with synthetic bodies (to say nothing of concentrates that are offered under their true names, and others that are sold as non-compounded bases), he certainly has no bed of roses, when his training and experience do not qualify him to exercise proper judgment.

There is an old Roman principle of law, *caveat emptor* (let the buyer beware) that would seem to throw the responsibility entirely on the shoulders of the buyer; but

in view of the fact that he is dependent on the producer to some degree, this principle should not govern.

On the whole, the situation is much better than one might reasonably suppose, and is improving every day because of the efforts to furnish and secure raw materials that are being made by conscientious producers and manufacturers.

The solution of the whole question lies in the hands of the manufacturer and it is for him to employ competent chemists, so as to be certain of buying raw materials in a state of purity and at the right price, and to manipulate them with good judgment.

ORANGE OIL AGAIN.

In another column we publish a letter from an officer of a California concern engaged in the production of lemon and orange oils. In the interest of fair play, we take pleasure in putting the "other side" of the situation before our readers; and on account of the touching plea that is made for protection, that an infant industry may be reared to the weaning stage, we feel impelled to say a word or two on that phase of the subject.

Hitherto, we have concerned ourselves with the technical features of the Payne tariff law, avoiding the expression of any opinion on the possible intent of Congress, and on the righteousness, economical or political expediency, or viciousness of the "joker," for such is the name that has been applied to the word "oils" in paragraph 21, even in official circles.

The consumption of orange oil is about 80,000 pounds a year, and the consuming manufacturers would be compelled to pay this tribute till the orange oil industry had been developed to a profitable scale; and if the proposal were then made to reduce the duty to 25 per cent. ad valorem, or better still, to restore orange oil to the free list, what a row there would be!

We stand as firmly as any for the protection and development of American industries; but we are just as strong in our opinion that in the present case the imposition of a duty of \$1 a pound would be an imposition, as the intent of Congress was plainly to make orange oil dutiable at 25 per cent. ad valorem.

THE SOAP INDUSTRY.

We begin with this issue the publication of a series of scientific articles on the manufacture of soap; international reports of soap and soap machinery patents; full news reports of the soap industry, and in all this new department, under the guidance of a recognized soap chemist, will be of great interest and value to all manufacturers of soap—household, textile, toilet, etc.

A complete statement of our editorial plans for 1910 will appear in our November issue.

A PROTEST RE ORANGE OIL.

To the Editor of the AMERICAN PERFUMER & ESSENTIAL OIL REVIEW:

SIR: We have read your editorial entitled "The duty on orange oil," in your September issue, and aside from the discussion of the technical feature of the law, whether orange oil should or should not be classified as an essential oil, we wish to submit for the consideration of your readers a few remarks on the American phase of the situation.

Congress has deemed it wise to recognize a new American industry of some interest to flavoring extract manufacturers, by taking orange oil off the free list, and making it dutiable at either 25 per cent. ad valorem, or \$1.00 per lb. specific, as developments will show.

We think that those who are fighting for the classification of orange oil as an essential oil, are unintentionally injuring the interests of extract manufacturers by hindering the development of the fruit oil industry in the United States. We think that you will admit that whatever scientific progress is made in the essential oil industry in this country will be to the ultimate benefit of the manufacturers; and although the pioneer orange oil producer may be especially benefited during the development period by tariff assistance, in the end everybody concerned will participate.

That this was unquestionably the intention of Congress in framing the Payne Tariff Law, is indicated by the title of the law, viz.: "An Act to Encourage the Industries of the U. S.", and this applies to an infant industry rather than to the large combinations of capital that are already strongly fortified.

It has been frequently stated that it would never be possible to produce orange and lemon oil in California; but it is a fact that these oils are being produced to-day. Their production began some 7 years ago, and at least one concern located in Pasadena, Cal., in the heart of the San Gabriel Valley, has a factory devoted solely to the production of fruit oils. The price of these oils is not yet down to that of the imported oils; but in view of their superior quality a duty of \$1.00 will put them practically ahead of Italian oils when quality is considered as well as price.

The following analyses of Dr. Samuel P. Sadler, a member of the Committee of Revision of the U. S. P., show the quality of the California oils.

ORANGE.

"The sample received by us was of a clear reddish color and possessed a peculiarly agreeable and persistent odor of the ripe orange.

The result of the analyses were:

Specific gravity at 15° C. (59° F.).....	0.8567
Optical rotation	+88.46°
Optical rotation of 1st 10 per cent distillate.....	+90.00°
Citral and aldehydes (per cent.).....	1.28
Terpenes (per cent.).....	88.36
Resins (per cent.).....	10.36
Per cent.....	100.00

As compared with the common expressed oil of orange, this shows a slightly higher specific gravity (normal 0.848 to 0.852), as would be expected; a slightly lower optical rotation (normal 94), as would also be expected; and a

notably higher percentage of dissolved resins than is found in the expressed oil.

It is these dissolved resins, however, that undoubtedly give to your product its peculiar fragrance and cause it to resemble so closely the ripe fruit itself.

LEMON.

This was a greenish yellow color and possessed in a marked degree the true fragrance of the lemon.

The results of the analyses were:

Specific gravity at 15° C. (59° F.).....	0.864
Optical rotation	+57.75°
Optical rotation of the 1st ten per cent. distillate.....	+54.25°
Citral and aldehydes (per cent.).....	0.83
Terpenes (per cent.).....	84.70
Resins (per cent.).....	8.61
Per cent.....	100.14

Neither of the new products showed the presence of any foreign matter, adulterant, or preservative of any kind."

(Signed) SAMUEL P. SADLER & SON,
Philadelphia, Pa.

It will be seen that they contain not only the citral, aldehydes and terpenes; but also the more valuable resins in the peel, and which the foreign oils seem to lack.

These resins are of great value for flavoring purposes, for an extract made from the peel of the fresh fruit is superior to an extract made from the ordinary Italian oil; as it has the unmistakable true fresh fruit aroma and flavor. Extract manufacturers are now using these California oils to "tone" the imported oils, and if the \$1.00 per lb. shall prevail, the price of the California oil will be low enough to enable any manufacturers to use it instead of Italian oil.

It is entirely possible for us in California to furnish extract manufacturers of the country with a fruit oil of higher grade than they are now using, and at an equally low price, if this new industry is given a chance to develop.

C. C. MANN,
Pasadena, Cal.

TREASURY DECISION.

(T. D. 3006.)

Olive Oil.

Denaturing of olive oil under paragraph 639, tariff act of August 5, 1909.

TREASURY DEPARTMENT, Sept. 23, 1909.

SIR.—The department duly received your letter of the 4th inst., relative to certain proposed denaturants for olive oil.

The Secretary of Agriculture expresses the opinion that gasoline or naphtha would not be a safe denaturant, on account of the ease with which it could be removed by simply distilling off the gasoline, which has a very low boiling point.

Regarding the question of a more specific designation for spindle oil, the Secretary of Agriculture advises that it would be sufficient to specify that a petroleum oil of a specific gravity of 0.895 to 0.906 be furnished, and that this is a readily obtainable commercial product which is sold and handled largely on the basis of its specific gravity.

You will be governed accordingly.

Respectfully,

(67686.)

JAMES B. REYNOLDS,
Acting Secretary.

Collector of Customs, Providence, R. I.

SAPONIFICATION

It is only in recent years that this important subject has occupied the serious attention of chemists, and we are now, due to their efforts, arriving at some definite conclusions as to the chemical and physical actions which underlie the process. The process of saponification was practised many hundreds of years ago by the ancients, when they made crude soaps from wood ashes and fats. They, however, knew nothing of the mechanism of the operation, but as time went on many operators made careful observations of the effects obtained by the use of different oils and fats, and also the effect of the impurities contained in them and the alkaline leys. For instance, it was found that saponification was more or less retarded by the presence of foreign salts in the caustic ley; the foreign salts would be principally sodium, chloride and sulphate. In fact, the retardation was at times so great that when part of the fat had been saponified the reaction stopped, and the mixture of fat and soap had to be "salted out," the partly-spent ley, *i.e.*, ley containing some caustic soda which would not react on account of the inhibiting effect of the impurities present, removed and the process of saponification continued with fresh ley. It was also discovered, no doubt after much experimentation, that for the complete saponification of fats and oils an excess of caustic ley was necessary. So by the method of trial and failure combined with keen observation, the process of saponification of fats and oils was gradually improved.

By saponification or hydrolysis is meant the splitting up of an ethereal salt into its components with the addition of water. The ethereal salts or esters of which the fats and oils are composed are known as glycerides, and consist of three fatty acid radicals in combination with one glycerol residue. The fact that glycerol behaves as a tribasic body, and therefore combines with three molecules of fatty acid, makes the mechanism of the reaction which takes place during the saponification of fats and oils much more complicated than that of the ordinary esters, for instance, ethyl acetate. All ethereal salts do not saponify with the same ease. As a rule, readily-formed esters are just as readily saponified, but those that are formed with difficulty are difficult to saponify. For instance, the preparation of the ester, ethyl acetate, is fraught with no difficulty, and it is saponified with ease, but to prepare, say, tristearine is a tedious operation, and, as is found in practice, stearine (glycerol stearate) is not so easily saponified. It is an established fact that the speed of esterification diminishes as the molecule grows larger, and the rate of saponification is likewise decreased.

As with ester formation, the reaction of saponification is a reversible one. By a reversible reaction, we understand one that is never complete in one direction, but when a certain proportion of the products has been

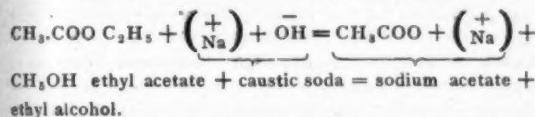
formed, a condition of equilibrium is reached. According to the relative quantity of the reacting substances, the temperature, etc., this proportion varies. If, however, one of the products is removed, the condition of equilibrium is disturbed, and the reaction may be completed. The velocity with which a chemical reaction strives to reach its state of equilibrium increases enormously with the temperature; a rise of 10 deg. usually doubles or trebles the velocity of the reaction. During the progress of a chemical reaction (saponification) an elevation of temperature results, and this in turn accelerates the velocity. This increase in velocity determines a more rapid decomposition, and this means an increased development of heat, which again reacts to hasten the reaction. In many instances the reaction velocity is very slight at ordinary temperatures, and so, therefore, is the amount of heat developed. To hasten the reaction in these cases, it is necessary to apply external heat and at the same time to prevent loss of heat by radiation. It should also be remembered that substances react more readily in the liquid state on account of the greater opportunity of collisions between the molecules of the reacting bodies, and the reaction is considerably increased the higher the temperature, because the activity of the heat movement increases the relative number of the collisions between the reacting molecules. Also, in the liquid state the tendency to ionise is greater, and as in the case of saponification where an electrolyte is usually one of the reacting substances, the phenomenon of ionisation plays an important part. In fact, the saponification velocity is very closely proportional to the quantity of free hydroxyl (OH) ions present. In the case of esters dissolved in water, both hydrogen and hydroxyl ions cause acceleration of the process of saponification. If the solution of the electrolyte is too concentrated, there will be a low degree of dissociation into ions, and, therefore, to secure the best results, it is necessary to use as dilute a solution as is compatible with practical working. In the case of two substances which are easily ionised, a chemical action takes place between them instantaneously at ordinary temperatures if they are dissolved to a moderate degree. With substances that are dissociated to a slight degree, the reaction nearly always takes place slowly at the ordinary temperature, and in order to hasten it it is necessary to use elevated temperatures. In cases where a reaction mixture contains only one substance in the dissociated state, it is also necessary to raise the temperature to obtain any marked chemical action. Should there be two substances in the reaction mixture, one of which is in solution and dissociated, and the other not dissociated and insoluble in the solvent, it is necessary in order to bring about a vigorous reaction to produce an emulsion as well as raise the temperature. This latter case obtains in the process of soap making.

In the various methods of saponifying esters, glycerides,

etc., water acids and bases find application. From the work of various observers, it appears that the strong bases possess about the same reaction velocity; and that as regards the esters, on the whole, their reaction velocity is smaller the greater the number of atoms contained. The bases generally used for the saponification of fats and oils (glycerol esters), as well as for some of the mono-hydric alcohol esters, are caustic potash and caustic soda, both strong bases. Now these bases when dissolved in water are dissociated into their ions, viz., caustic potash

$\begin{matrix} + & - & + & - \\ \text{K OH} & & \text{Na OH} \end{matrix}$

into K OH, and caustic soda into Na OH. The former base is dissociated into its ions to the extent of about 97.2 per cent. It has been found that the greater the degree of dissociation the stronger the saponifying power of the reagent. Ammonium hydrate is only dissociated to the extent of 2.6 per cent., and its saponifying power is correspondingly very weak when compared with that of caustic potash. Saponification appears to consist in the action of the hydroxyl ions of the caustic potash or soda upon the ester molecule, the positive ion of the base seemingly playing a perfectly indifferent role. The equation below will make this statement more clear:-



The less the base is dissociated the weaker is its action, and bases subjected to the same degree of dissociation exert the same degree of strength upon the ester. As potassium and sodium hydrates are dissociated to practically the same degree, there is no essential difference in their actions on the esters of the mono, or polyhydric, alcohols.

That impurities (for instance, neutral salts like sodium sulphate) are apt to retard saponification is a well-known fact. With the stronger bases the influence of impurities is not so strongly marked as with the weaker bases. Arrhenius, on the basis of very abundant material of observation, succeeded in establishing the following propositions:

(1) The saponification velocity of the stronger bases in fairly extended dilution is only slightly changed (less than 1 per cent.) by the presence of neutral salts.

(2) The saponification velocity of ammonia (weak base) is exceedingly depressed by the presence of ammonium salts; and, moreover, equivalent quantities of the most different salts exert nearly the same effect.

In the case of esters soluble in water acids are often used in the place of alkalies to bring about saponification. The presence of a small portion of acid assists materially in clearing an ester in dilute water solution, and this accelerating influence is known as the catalysis of esters. It has been found that the catalytic action of an acid increases with the degree of its dissociation, and the velocity with which an ester will be split is at every moment proportional to its concentration. With water soluble esters it is thought that both hydrogen and hydroxyl ions cause an acceleration of the process of saponification, and, according to the extensive investigations of B. Lowenherz, the rate of saponification of various esters by hydrogen ions is

nearly independent of the nature of the alcohol contained in the ester, but depends largely on the nature of the acid contained.

It will now be convenient to consider the saponification of oils and fats used in soap making. The conditions obtaining in the soap pan are not the best to obtain a rapid saponification of the oils or fats. Firstly, the esters (or glycerides) are not soluble in the aqueous solution of caustic soda or potash used to bring about the saponification; secondly, there are impurities present that tend to retard the action; and, thirdly, the chances of a condition of equilibrium being established is favored by the fact that all the products of the reaction remain in the pan; in the case of hard soaps during the saponification change, and in the case of soft and cold process soaps, etc., throughout the entire operation. Especially in the case of hard soaps the state of equilibrium is partly destroyed by the use of an excess of caustic soda. In the case of soft soaps an excess of caustic potash is not admissible, and hence saponification is never quite complete; unsaponified fat is always present in soft soaps.

That an excess of alkali is necessary to completely saponify fats or oils has been proved by Lewkowitsch and Clapham. These workers made experiments on tallow and other oils and fats, and an account of one of their experiments is given below. Two thousand grams of tallow were boiled by means of open steam, as in the method employed on the large scale, with 282 grams of pure caustic soda—the theoretical quantity required to neutralise the fatty acids obtainable. The boiling was continued beyond the time required on a manufacturing scale. The pasty mass was found to consist of:—Total fatty matter, 33 per cent.; total alkali, 3.708 per cent.; fatty acids as soap, 31.01 per cent.; combined alkali as soap, 3.496 per cent.; unsaponified fat, 2 per cent.; free alkali, 0.212 per cent. This experiment shows that only 94 per cent. of tallow had been saponified. On adding an excess of alkali the equilibrium between the reacting masses is changed in the direction of a greater amount of soap being formed, so that by employing a suitable excess—as is done on a large scale—complete hydrolysis of the fat, followed immediately by complete neutralization of the fatty acids, is obtained.

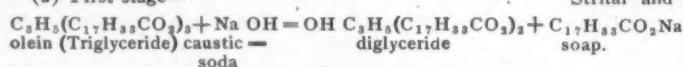
Other points to be observed in the saponification of fats and oils in the soap-making process are the employment of a sufficiently high temperature, and the obtaining of a thorough emulsion in the primary stages of the process, combined with efficient agitation. With elevated temperatures a greater degree of dissociation of the electrolyte (alkali) takes place, and at the same time the reaction velocity of the process is increased, both of which materially assist in the saponification. As, to a large extent, the time occupied in the process is an important factor in the determination of profit or loss, the question of temperature should receive careful attention. As the reacting bodies are not mutually soluble it is essential to obtain a condition as near as possible to that of solution. This condition is that of an emulsion. In this state the particles of oil or fat exist as tiny globules suspended in the solution of the electrolyte. Now, the smaller these globules the greater the contact surface, and therefore the more rapid

the reaction. As the reaction goes on at the surfaces of contact a state of saturation arises at these points, and this is accompanied by diminishing reaction velocity. In order to avoid this it is necessary to provide for thorough agitation of the reacting mass by means of direct steam or a mechanical contrivance. It must be remembered that an excess of alkali, too strong a solution of alkali, or an excess of water will break up an emulsion or render its formation impossible.

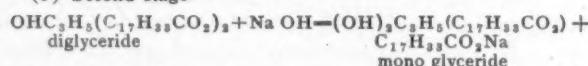
Soap, like all esters, is subject to hydrolysis by water; the result of treating a clear hot solution of soap with water being the precipitation of an acid salt and the setting free of caustic alkali. This property of hydrolytic disassociation was used by Chevreul to obtain an approximate separation of oleates from stearates; the alkali salts of oleic acid being less readily disassociated than those of stearic acid. Hydrolytic influence is retarded by such bodies as glycerol, alcohol and alkalies, and in many soap preparations where a clear fluid is required containing a maximum amount of water one or other of these materials is used. In the "fitting" of soap a little free alkali is purposely kept present to prevent the soap taking up too much water and to lessen the liability to hydrolysis. The presence of acid salts of the fatty acids renders the soap liable to rancidity.

To discuss fully the theories which deal with the mechanism of the process of saponification of the glycerides would take up too much space. However, a few words on the principal one will not be without interest. In the year 1897, Geitel advanced a theory, which he supported with experimental evidence, that saponification took place in three stages, diglycerides being formed first, then monoglycerides, which are finally broken up into fatty acids and glycerol. This theory has received the support of many chemists, but others have disagreed with it. The equations given below will make Geitel's theory more clear to the reader:

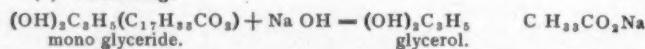
(a) First stage—



(b) Second stage—



(c) Third stage—



Among those who support the three-stage theory, are Lewkowitsch and Kremann, and the latter worker, who has studied the reaction from a physio-chemical point of view, states that his experiments show there can no longer be any doubt that the saponification of esters of polymolecular alcohols is a bimolecular and not a polymolecular reaction. Lewkowitsch based his conclusion that mono- and diglycerides were formed in the saponification of fats on the fact that he was able to indicate their presence by high acetyl values. Marcusson attributes the high acetyl values observed by Lewkowitsch to alterations of the fatty acids by absorption of oxygen, formation of anhydrides, etc., rather than to the presence of mono- and diglycerides. He also states that if as Kremann found in his physico-chemi-

cal investigations, the hydrolysis of fats does proceed in stages, it is difficult, if not impossible, to isolate the intermediate compounds. Lewkowitsch, in his reply to Marcusson, points out that in the first seven experiments described his method was liable to cause further decomposition of the intermediate mono- and diglycerides. Yet, in one experiment, Marcusson actually obtained higher acetyl values, which he attributed to the alteration of the fatty acids, though without offering any proof of such alterations. He also obtained higher acetyl values in his experiments on enzymatic hydrolysis, notwithstanding the fact that the samples were taken in such a way that the unstable intermediate lower glycerides might easily be overlooked. In Lewkowitsch's opinion, these higher values are striking proofs in support of his theory of saponification by stages. R. Fanto opposes the theory of Geitel and Lewkowitsch, stating that the presence of di- and mono-acyl hydrins cannot be detected, and that in homogeneous solutions the saponification is practically quadrimolecular. L. Bilbiano also disagrees with Lewkowitsch, and considers that the high acetyl values are due to oxidation. Another worker, R. Wegscheider, has made a comprehensive theoretical study of the question of saponification, and states that if the hydrolysis of triglycerides proceeds by stages, then there are not three reactions only, but the whole of the seven possible ones to be taken into consideration. The seven reactions are made up of: Two reactions for the formation of the two isomeric diglycerides from the triglycerides, three for the formation of the two isomeric monoglycerides from the diglycerides, and two for the formation of the acid from the monoglycerides. This worker has also shown that the absence of measurable quantities of mono- and diglycerides in the hydrolysis of insoluble triglycerides in a heterogeneous system by aqueous solutions is to be expected, even if the hydrolysis proceeds by stages. From the results of many experiments carried out with tallow, olive oil, and tripalmitin, M. J. Stritar and R. Fanto conclude that the saponification of $\text{CH}_3\text{H}_{53}\text{CO}_2\text{Na}$ fats by aqueous solutions of alkaline hydrates occurs practically directly.

There are very many methods which can be used to saponify oils and fats, and to deal with them all in this article would be quite out of the question. The reader is referred to the many works on soap manufacture, and to patent literature for full information on the subject. For convenience the methods of saponification may be divided into three classes, viz., (1) Saponification by aid of alkalies, water, acids or other chemicals. (2) Saponification by aid of enzymes, and (3) bacterial saponification, and saponification by catalytic agents. Those of class one find the largest application. Those of class two have come to the fore lately. Bacterial saponification is as yet only in the experimental stage. There is one process used in practice in which a catalytic agent induces saponification.

The yield of olives in Uruguay for the 1908 season was 264,552 pounds; for 1909, 352,736 pounds; while the crop for 1910 will have a corresponding increase, estimated at more than double that of 1909, as many more trees will then have reached the bearing age.

THE DETERMINATION OF BENZALDEHYDE IN ALMOND FLAVORING EXTRACT

By W. DENIS and P. B. DUNBAR (Bureau of Chemistry, U. S. Department of Agriculture).

The methods proposed for the determination of benzaldehyde in flavoring extracts may be divided into three classes:

(1) Methods based on the formation of the addition product with acid sodium sulphite.¹

(2) Colorimetric methods.²

(3) Methods involving the precipitation of the oil of bitter almonds.³

In the examination of almond extracts of known composition by these methods we have found that the sodium hydrogen sulphite method invariably gives results far below the truth, with the colorimetric method we have not been successful, while Howard's precipitation method is apt to give figures much too high, due probably to the difficulty of removing the last traces of chloroform.

We have found that we are able to obtain results within 97 to 99 per cent. of the theory by precipitation of the benzaldehyde in almond extract, and in bitter almond oil, as the phenylhydrazone⁴ according to the equation



This method has already been proposed by Denner⁵ for the quantitative determination of benzaldehyde in bitter almond water; by Rocques⁶ for its determination in kirsch; and by Herissy⁷ for the determination of the benzaldehyde resulting from the hydrolysis of amygdalin.

The reagents used by us are:

Reagent (1): Phenyl hydrazine hydrochloride... 2 grams
Crystals of sodium acetate 3 " " "
Water 20 c.c.

Dissolve the sodium acetate in the water, add the phenyl hydrazine hydrochloride, shake for five or six minutes, and filter, or

Reagent (2): Phenyl hydrazine..... 1 c.c.
Glacial acetic acid..... 1.5 c.c.
Water 20 c.c.

¹ U. S. Pharmacopoeia, VIII, p. 68. Leach, Food Inspection and Analysis, p. 750.

² Woodman and Lyford, *Jour. Amer. Chem. Soc.*, 30, 1607.

³ Howard, *Ibid.*, 30, 610.

⁴ Fischer, *Liebig's Ann. d. Chem.*, 190, 134.

⁵ Denner, *Zeit. für analyt. Chem.*, 29, 228. *Pharm. Centralhalle*, 28, 527.

⁶ Rocques, *Rev. Internat. des Falsifications*, 1907, p. 66.

⁷ *Journ. de Pharm. et de Chim.*, 1901, p. 60.

⁸ Circular 19, Office of the Secretary, U. S. Department of Agriculture.

⁹ Oil of bitter almonds calculated from the benzaldehyde by use of the U. S. P. Standard, i. e., that oil of bitter almonds shall contain at least 85 per cent. benzaldehyde.

Mix the acetic acid and water, then pour in the phenyl hydrazine.

Reagent (2) we find to be much more convenient on account of the rapidity with which it may be prepared. Whether reagents (1) or (2) be used, the solution should be made up immediately before use, and solutions more than an hour old should be discarded. The method of precipitation is as follows:

Two 10 c.c. portions of almond extract are measured into 300 c.c. Erlenmeyer flasks; to one portion is added 10 c.c. to the other 15 c.c. of either reagent; shake, stopper tightly, and allow to stand over night in a dark place. The next day add 200 c.c. of cold water to each flask, and filter on tared Gooch crucibles provided with thin mats of asbestos. Wash with cold water and finally with 10 c.c. of 10 per cent. alcohol. Dry for three hours in a vacuum oven at 70-80 deg. C. If a vacuum oven is not available, the drying may be accomplished in a vacuum dessicator over sulphuric acid, but will of course take much longer than when a higher temperature is employed. The weight of the precipitate multiplied by 5.408 gives the number of grams of benzaldehyde in 100 c.c. of the solution.

Our reason for using 10 and 15 c.c. of reagent on different portions of the same extract is based on the fact that we have found in the examination of a large number of commercial extracts that while the large majority conform to the official standards,⁸ and contain in the neighborhood of 1 per cent. by volume of oil of bitter almonds, occasionally extracts are met with containing as much as 6 per cent. of benzaldehyde; in such preparations it is obvious that, while the use of 10 c.c. of the reagent may give good duplicates, the results would be far below the truth.

The following results have been obtained on almond extracts made in this laboratory, and containing known amounts of benzaldehyde or oil of bitter almonds.

Analyst.	Gr. benz-	Gr. bitter	Per	Grs.
	aldehyde	almond oil	aldehyde	bitter
	per 100 c.c.	per 100 c.c.	per 100 c.c.	oil per 100 c.c.
E. H. G....	0.995	....	0.989	99.5
W. E. H....	0.995	....	0.973	97.8
W. D.	1.659	....	1.600	97.0
W. D.	0.995	....	0.966	97.0
W. D. ....	....	1.086	0.949	1.090
W. D. ....	....	0.947	0.787	0.905
P. B. D.	1.00	....	0.980	98.0
P. B. D. ....	....	1.00	0.890	1.02

The presence of benzoic acid, which in varying amounts must always be present in almond extracts, does not affect the accuracy of the results.

(a) In a solution containing 1.6598 grams of benzaldehyde and 0.610 gram benzoic acid per 100 c.c. there was found on analysis 1.638 grams benzaldehyde, which is equal to 98 per cent. theory.

(b) In a solution containing 1.6598 grams benzaldehyde and 1.220 grams benzoic acid per 100 c.c. there was found on analysis 1.628 grams benzaldehyde per 100 c.c., which is equal to 97 per cent. theory.

In the same way it was found that nitrobenzol, which is sometimes placed in almond extracts, has no effect on the precipitation.

(a) A solution containing 0.9950 gram benzaldehyde and 0.8676 gram nitrobenzol per 100 c.c. gave 0.9756 gram benzaldehyde per 100 c.c., which is equal to 98 per cent. of theory.

(b) A solution containing 0.5 gram benzaldehyde and 0.5 gram nitrobenzol per 100 c.c. gave 0.498 gram nitrobenzol per 100 c.c., which is equal to 99.6 per cent. theory.

PRODUCTS OF EUCALYPTUS.

There are many plants in the Commonwealth of Australia where eucalyptus oil is distilled for medicinal purposes, and there is said to be a plant in New South Wales where acetic acid is an important by-product in the distillation of the oil; but at the Port Esperance plant the eucalyptus oil itself is considered merely a by-product in the preparation of the more valuable extract for use in preventing deterioration of boilers.

ACTION OF EXTRACT—HANDLING THE LEAVES.

This extract has the appearance and consistency of tar when prepared for export to England. It is shipped with no more liquid in it than is necessary to prevent caking in the casks en route, it being thinned, however, with the addition of water on its arrival at Liverpool. The extract is said to diffuse itself through the water of boilers and cleanse them of any acid, greasy or saline matter, forming with such deleterious ingredients a harmless sediment which sinks to the bottom, and it prevents any formation of crust around the water line.

Four tons of eucalyptus leaves will produce about one ton of the extract for boilers, and about 70 to 80 pounds of eucalyptus oil. This plant is located in the vicinity of extensive forests of the blue gum (eucalyptus) [which are also grown to some extent in Florida and California.—B. of M.] Twigs of the leaves are taken off the trees irrespective of the age or height of the tree, except that too old trees are not preferred owing to the great preponderance of woody matter. They are placed in large bags and, by an iron hook arrangement, are slid down the hillsides along telegraph wire especially strung for their easy transportation to the mill. The leaves are for the most part about 10 inches long and from 1 inch to 1½ inches wide. The leaves most used at this plant are taken from and underbrush of trees in "bush" destroyed by fire about two years ago. The same trees may be considered good for another crop of satisfactory leaves in about three years after the first leaves have gone to the mill. The leaves are poured into a large cauldron, called a digester, and steam is applied for four hours. During this steaming the

acetic acid in the leaves passes off into vapor, the eucalyptus oil is carried out by the steam to the condenser, the waste water being then separated by use of a siphon.

EXTRACTING THE OIL—ITS MEDICINAL USE.

The residuum in the digester is then subjected to steam pressure, by means of which the valuable extract is obtained, being first, however, boiled down to the consistency of tar. The woody matter, which is left in the digester after the oil and extract have been taken out, is then removed and burned as refuse. It is curious that the acetic acid and the boiler extract, both obtained from the eucalyptus leaves, are exactly opposite in their effect on iron, the former destroying and the latter preserving it. In order to prevent the digesters being eaten by the action of the acetic acid in the leaves, they are painted with the extract before the leaves are put in and the steam applied.

Some experiments have recently been made at Port Esperance to ascertain if varieties of eucalyptus leaves, other than the blue gums, could be used for the production of both boiler extract and eucalyptus oil, and as a result it appears that practically every variety of eucalyptus leaf will furnish the boiler extract, but that the best quality of eucalyptus oil by-product is obtained from the blue gum. The stringy bark (*Eucalyptus obliqua*) contains more of the extract, but less of the oil than the blue gum.

The local consumption of eucalyptus oil for medicinal purposes is quite large. It is a favored remedy for colds, rheumatism, asthma and other bronchial affections, skin diseases, toothache, burns, bruises, etc. It is frequently sprinkled over bedroom floors to drive away flies and mosquitoes. It is perhaps most commonly used with sugar, often in the form of lozenges. It is occasionally taken in overdoses, and I have heard of several deaths from this cause in Tasmania quite recently. The exportation of the oil appears small compared with the local use. The value of the exports for last year from Tasmania was only \$4,560.

A LOCAL VIEW OF THE OIL TRADE—OTHER USES OF TREE.

In a recent article in the *British Australasian* I note the following:

"An opportunity for Australia seems to present itself in the eucalyptus oil trade, if only a little more energy is extended in pushing it. The supply, of course, is almost unlimited, and the demand may be much extended, even though the season now closing has been rather a disappointing one. The weather, on which so much depends for the trade, has been of the right sort, but despite the ravages of influenza the oil has been slow of sale, and an exceptional quantity remains in dealers' hands. But there is a sale for eucalyptus oil all through the year. One or two points for shippers in Australia are worthy of mention. Owing to the use of inferior tins, in which oil is sometimes sent forward, rust is set up, and the oil has to be 'treated' on reaching London in order to get rid of this fault. The best way is to put the oil in cases to hold two cans containing 25 pounds of oil each. The home trade does not care for the use of drums in any shape; it is noticeable that the oil which remains unsold the longest is usually packed in drums."—U. S. Consular Report.



VETIVER AND THE OIL



The vetiver is a very interesting exotic plant, in the sense that its use in the arts is increasing every year. It belongs to the family of *gramineae*, the sub-family *panicum*, the tribe of *chloridaceae*, and the genus *chiendent*, or couch grass; hence it is often known in France as Indian *chiendent*, for it grows wild in the islands and countries of the East Indies. It is a perennial grass with terminal flower clusters, the spike being composed of a large number of small pedicillate spikes.

The germ is composed of a large free cotyle, or cup-like part, winding about and enveloping the small stem up to the level of a second smaller cotyle. Between the first leaf and the *geminule* and the cotyles is a real internode. The small stem enfolds a radicle in a little pocket.

The leaves are vaginant, but with edges not united and with parallel nervation. These leaves of considerable size are put to divers uses; when dried they constitute the vetiver grass, of which are made according to the locality, tents, parasols, matting, window shades, baskets, hats, etc. In many countries the natives use it to thatch their houses.

The stem is herbaceous and very rich in silica. The roots, very woody, are the most interesting part of the plant, since it is from them, when properly handled and prepared, that a much-esteemed perfume material is obtained.

There are several species of vetiver, but only one which is cultivated and handled. Its geographical range is very wide, it being found wherever the climate is sufficiently warm and moist; it requires a temperature of 25 per cent. (70 deg. F.) and likes strong sandy-clay soils. It is found in the Indies, in all the islands of the Indian Ocean, in Malaya, Madagascar, in the Antilles and in Brazil, where its cultivation has been made an object of study, and real progress therein has been devoted.

It is generally propagated by transplanting pieces of the collar or neck to which roots are still attached. In many localities this cultivation is done in a rudimentary manner, because in many cases the vetiver is used only in borders of two or three rows to protect a more delicate growth of vanilla or coffee from the dust of the highways.

It is on this same principle that the cypress is used in the south of France to protect the crops from the effects of the mistral (heavy wind storms from the Mediterranean).

In the regulation plantations an intelligent system is followed. After simply clearing away the brush, parallel furrows are turned about five feet apart. Experience has shown that transplanting in a crossed form gives the best results.

This consists in planting not perpendicularly to the soil with one slip in a hole, but by putting in two slips, inclined to one another at an angle of 90 deg., and consequently at an angle of about 45 deg. each to the soil. These groups of slips are set about six inches apart. The planting is done at different times in different localities, but always at the beginning of the rainy season. The first harvest of leaves which can be utilized is obtained after eight or ten months, but it takes two years for the roots to obtain the development necessary to use them. Once or twice a year the space between the rows is thoroughly cul-

tivated; this fact is important in the sense that the work does not need to be done at a precise moment, as is the case with the sugar cane, vanilla, etc., which at the time of hoeing, impregnation, harvesting and the like cannot be subjected to any delay.

The harvesting of the roots is done, as we have said, two years after planting and immediately succeeds the cutting of the leaves. The laborers are grouped in gangs, generally of three. One of them loosens the roots with a pick; the second, provided with a straight bar, pries up the clods from below and overturns them, while the third breaks up and disintegrates as best he can the lumps of earth which cling to the roots; thus these latter are freed from earth and stones on the spot; the clods are cut off at the junction of root and stem and the defective roots thrown aside.

The average yield of roots cleaned in this manner is from $1\frac{1}{4}$ to $1\frac{3}{4}$ tons to the acre. The roots are at once taken to the river, where they are washed and put to dry. They are afterward packed in square wooden boxes, to the movable bottom of which is attached an iron bar which serves to exert the necessary pressure. After all these operations there are about $2\frac{1}{2}$ tons to the hectare ($2\frac{1}{2}$ acres), worth generally about \$160, leaving a profit of about \$50 per hectare.

The product being now packed, we leave the scene of agriculture to enter the industrial domain where vetiver is used either in the form of roots or powder or in the form of extract or oil.

Oil of vetiver, called also oil of iwarancusa, is produced by distilling the roots of the *audropogon muricatus L.* This is an herbaceous plant of the family of *gramineae* and grows exclusively in tropical countries, particularly in Bengal and the island of Reunion.

The genus *andropogon* comprises numerous species which furnish certain oils sought for by reason of their peculiar aromatic odor and which are generally produced by the distillation of the fresh grass whose leaves yield a characteristic perfume. This, however, is not the case with the one we are considering. The *audropogon muricatus* forms tufts which reach a considerable height and yield no perfume, while its roots give out a strong and agreeable odor. The roots are treated by distillation to extract the oil of vetiver, which is very useful in the manufacture of perfumery by reason of the ease with which it may be used, its invariable character and the delicacy of its perfume, qualities which are eminently desirable and valuable in that industry. According to Schimmel's laboratory the density of the oil varies from 1.019 to 1.027; its plane of polarization turns to the right, its rotary power being more than 25 deg. It is soluble in from 1.5 to 2 parts of 80 per cent. alcohol. When boiled with potash it takes on a reddish-brown color. Concentrated sulphuric acid carbonizes it, with the formation of a deposit of green resin, soluble in ether, but insoluble in alcohol. Nitric acid, cold, colors the oil green, but warm, the oil takes a resinous form and decomposes completely. The chemical composition of the oil

(Concluded on page 151.)

TRADE NOTES

Mr. Otto Daniel, who visited this country last summer, has established his own business in Hamburg, Germany, and will devote considerable attention to the German group of essential oils. He will also represent the newly established firm Jean Caravan, Grasse, in which he is a partner, making a specialty of oils lavender, spike, rosemary, thyme, etc. Mr. Caravan, we are informed, was formerly engaged in the brokerage business in Grasse.

Those who have watched the progress of manufacturing concerns that depend in some measure on their stockholders for direct or indirect assistance in marketing their goods, must find some interest in The Sanitol Chemical Laboratory Co., of St. Louis. That company has been in the public eye of late on account of interminic warfare instituted by disgruntled stockholders in Philadelphia; and if we were to judge of the probable truth or falsity of their charges by "sizing up" the secretary of the company, Mr. Robert Emmett Desmond, we think the charges would be thrown out of the Court of Public Opinion. Mr. Desmond is a likable man, who enjoys the confidence of all whose relations bring them into contact with him; and we can testify to the marked esteem for him that we have noted in his friends.

We are in receipt of a circular from the Hanson-Jenks Co., 149 West 36th street, New York, who entered the field Oct. 1 as manufacturers of "perfumes and toilet specialties of the highest grade." Their initial products include violet perfume, toilet water, sachet, soap, almond meal, face powder, and talcum; and rose cold cream. Some fifty other numbers are in the course of preparation and will be brought out during the next few months. Messrs. Hanson and Jenks have been prominently identified with the perfume industry for 12 years and are thoroughly familiar with the needs of consumers. It is their intention to market their goods at restricted prices.

Julius Schmid, Astoria, N. Y., informs us that he has arranged with Armour & Co., Chicago, that the latter discontinue the manufacture of capping skins. This leaves the field to Mr. Schmid, who established his business in 1883.

Mr. G. Laffite, of Roure-Bertrand Fils, Grasse, arrived on Oct. 3, by *La Touraine* on his annual trip to this country.



ROBERT EMMETT DESMOND.

Dr. E. Charabot, of Ferrand & Co. (formerly Hugues Ainé), Grasse, sailed for home on *La Provence*, Sept. 30, In company with Mr. W. Parsons, of Zinkeisen & Co., New York, American agents for Ferrand & Co., Dr. Charabot visited a number of American manufacturers of perfumes, etc.

Mr. Paul Zinkeisen is on a pleasure trip through the far West, taking in Yellowstone Park, the Alaska-Yukon-Pacific Exposition that came to a close a few days ago in Seattle. Before returning he will make a trip to Alaska. Mr. Zinkeisen is an indefatigable traveler, and each year manages to visit some near or distant section that is filled with charm or other interest for the cosmopolite.

Mr. Ludwig Schiff, secretary and general manager of the Western Wholesale Drug Co., was a recent visitor to New York.

Lehmaier, Schwartz & Co., New York, brought suit against the Sanitol Chemical Laboratory Co., of St. Louis, recently in the Supreme Court, New York, for profits that would have accrued to them on the unexpired portion of a contract for collapsible tubes. They put in a claim for \$14,000, which the Court reduced to \$7,000. The jury rendered a verdict in favor of the plaintiff for \$4,000. The defendants claimed that the tubes were not up to specifications, to which Lehmaier, Schwartz & Co. replied that they should have been permitted to replace the unsatisfactory goods and to deliver the remainder as per contract. The jury evidently agreed with them to a certain degree. The verdict will be appealed.

Eckelhofer Bros., Cottage and Wolsey streets, Irvington, N. J., makers of white metal specialties, have added a department for the manufacture of sprinkler tops for toilet water bottles, etc. They were established in 1880 and have built up an excellent business.

The Evergreen Chemical Co., New York, have built up a substantial business in concentrated perfumes for extracts, toilet waters, sachets, talcum and the like. They were established in 1898, and from their booklet we learn that they have branches in London, Kioto (Japan), San Francisco and Montreal.

Mr. P. R. Dreyer, special representative for Ungerer & Co., New York, is making an extended Western trip.

W. J. Bush & Co., Ltd., of London and New York, are opening in Montreal a branch house for the purpose of supplying to their customers throughout Canada, through their established agents in Toronto, Winnipeg and Vancouver, their various fruit oils, essences, essential oils, etc. Messrs. Rose & Laflamme, of Montreal, no longer representing Bush & Co. in eastern Canada; W. J. Bush & Co.,

Ltd., will supply all goods direct to customers in that territory. Mr. A. E. A. Bettesworth, who has for many years been associated with the New York house, will have charge of the new branch, with headquarters at 490 St. Paul street.

Willard Ohliger, Phar. D., chief pharmacist for Fred'k Stearns & Co., Detroit, was in New York during the Hudson-Fulton Celebration; but while one of the most spectacular parades was in progress, he was calmly at-



WILLARD OHLIGER.

tending to business at the New York office in John street, in his usual imperturbable manner. This illustration was taken by our representative who prevailed on the modest subject to "look at the pretty canary bird."

Fred'k Stearns & Co. have just finished a 3-story building that will be devoted to the making of high-grade chemicals.

Early next spring there will be launched at the yards of the Maryland Steel Co., Sparrows Point, Baltimore, Md., a single screw steel steamer for the general freight trade on the Atlantic and Gulf coasts. It will be 325 feet long, 44 feet beam and 19 feet draft; speed, 10 knots; capacity, 3,500 tons; and last, but not least, will be christened *Ruth*. The little lady who will lend her name to the vessel is Ruth Priscilla Killeen, daughter of E. V. Killeen, who is secretary of George Lueders & Co., New York. Surely no steamer that proudly flies "Old Glory" at the taffrail could be christened with a more endearing name than that of the beautiful woman of the Bible, and which is borne by Mistress Killeen, aged 10. Good luck to the steamship and its sponsor!

David S. Brown, Jr., clerk, residing at 346 Manhattan avenue, has filed a petition in bankruptcy, with liabilities \$6,112 and assets \$15 cash on hand. He is a son of a wealthy soap manufacturer and a captain in the Twenty-second Regiment. All the debts are for rent under leases in 1901, 1907 and 1908, and the creditors are the trustees of the estate of William Astor, \$2,740; Harcourt Realty Co., \$873, and W. H. Hubbell, Brooklyn, \$2,499.

The J. O. Draper Co., Pawtucket, R. I., manufacturer of textile soaps, has just celebrated its fiftieth birthday. Congratulations!

The Joliet (Ill.) *Republican* reports that several men have been looking over Lockport, Ill., with a view to locating a soap factory there.

On Sept. 24 the drying room of the Reardon Soap Works, Cambridge, Mass., was damaged by fire.

The Akron (O.) Soap Co., operating a plant near Lancaster, Ohio, has prepared plans for the razing of its frame buildings, and the erection of brick buildings in their stead.

NEW INCORPORATIONS.

The Western Soap Co., Ltd., has been incorporated at Vancouver, B. C., Can.

The Thompson Manufacturing Co., Baltimore, Md., has been incorporated, with a capital stock of \$40,000, by Levi A. Thompson, Geo. B. Flynn and Louis H. Lange.

Purity Soap Co., Harvey, Ill.; manufacturing soap; capital, \$5,000. Incorporators: Ralph H. Bourne, Thomas Hammond, George G. King, Parker & Hagen, Marquette Building, Chicago, III.

Compagnie Riviera, 164 Front street, New York; purpose to manufacture and deal in soaps, perfumes, etc.; capital, \$1,000, of which none is paid in. Officers: President, C. E. Sholes, of New York City; treasurer, E. J. Duggan, of New York City.

Indianapolis, Ind.; capital stock, \$10,000; the manufacture and sale of soap, washing powder, perfumes and other toilet and laundry preparations. Officers: Edward Hayes, president; Charles Cook, vice-president; Henry W. Cleage, treasurer; George Worthington, secretary.

The Hayes-Willrich Soap Co., New Kensington, Pa.; capital, \$10,000. Officers and directors: Wilfret A. Ebner, president; Albert A. Willrich, treasurer; Robert A. Hayes, secretary and general manager; H. C. Osmond, R. E. Cochran, directors. The company will manufacture all kinds of soap, washing powder, cleansers and all kinds of toilet articles.

The Cannon Bros. Extract Co., Jacksonville, Fla., has applied for a charter. The concern has a capital stock of \$15,000. F. A. Cannon, the president of the company, is well known in Jacksonville and all over the State, having been in the manufacturing business for the past two years. G. F. Cannon, the vice-president, is the representative of Baker & Holmes Co. in the Tallahassee (Fla.) division. C. E. Clarke, the secretary, is the general manager of the Peninsular Insurance Co. and one of the best known business men in Jacksonville.

CATALOGS, CIRCULARS, PRICE LISTS, ETC.

Fritsche Brothers, New York, have issued a circular dealing with **ESSENTIAL OILS, SICILIAN** and **CALABRIAN**. Special attention is given to oils lemon and bergamot, agreeing quite closely with reports from other reliable sources.

National Aniline & Chemical Co., New York.—Wholesale Price List, Oct. 6, 1909.—Attention is invited to specialties for perfumers, including gum labdanum, white beeswax, rice starch, orris root, ylang ylang, maigloekchen (lily), otto of rose, etc.

Magnus, Mabee & Reynard, New York.—Wholesale Price List and Market Report for October-November.—This list is, as usual, bound in a characteristic cover, and the preface utilizes the Cook-Peary controversy to good advantage in calling attention to the lack of doubt that M. M. & R. claim with respect to their goods.

Cailler & Co., Inc., 16 Cedar street, New York, have sent us wholesale price lists of Anton Deppe Söhne, Hamburg, and Pelissier-Aragon, Grasse, whom they represent in this country. Anton Deppe Söhne are makers of essential oils, terpeneless oils, synthetics, colors, tinctures of aromatic gums, musk, civet, etc. Pelissier-Aragon make a specialty of French flower oils, liquid flower concretes, pomades, floral waters, olive oil, etc.

Paper Canister Mfg. Co., 219 N. 23d street, Philadelphia, Pa.—We are in receipt of this company's catalog illustrating and describing paper cans for talcum powder, coffee, spices, chemicals; paper tubes, etc. The cans are made of strong 3-ply cardboard, spirally wound, provided with cardboard or tin bottoms, sifting or plain tops finished in various styles. When labels are furnished, the tubes are labeled before cutting, the label being pasted all the way round, instead of only at the ends. When intended for liquids the can is submerged in hot paraffin.

PURE FOOD AND DRUG NOTES.

In this section will be found all matters of interest contained in **FEDERAL** and **STATE** official reports, newspaper items, etc., relating to perfumes, flavoring extracts, etc.

FEDERAL.

Bulletin No. 60, Bureau of Plant Industry, U. S. Department of Agriculture: "ITALIAN LEMONS AND THEIR BY-PRODUCTS."—1. The Italian Lemon Industry, by G. Harold Powell, pomologist, in charge of Fruit Transportation and Storage Investigations; 2. The By-Products of the Lemon in Italy, by E. M. Chace, assistant chief of the Division of Foods, Bureau of Chemistry. This Bulletin, issued Oct. 6, is of main interest in the chapter entitled Extraction of the Oil. There is nothing new in this description, a very full account having come from the pen of the late Dr. Cheney, U. S. consul at Messina, published

in our January, 1909, issue. Six plates give a very good idea of the region, groves, machinery used, etc.

STATE.

CALIFORNIA.—Bulletin of the State Board of Health, August-September, Vol. 5, No. 3.—Two violations in the case of flavoring extracts are reported, omitting the names of the manufacturers,

CONNECTICUT.—The Dairy and Pure Food Laws, corrected to the close of the legislative session of 1909.

KANSAS.—Bulletin of the State Board of Health, September, No. 2021.—"Soluble Concentrated Extract of Lemon; mfrs., Sharp & Dohme, Baltimore, Md.; contains no oil of lemon and is colored yellow with coal-tar dye; illegal.

No. 7539.—"Genuine Flavor of Lemon"; mfr., Ottawa Wholesale Grocery Co., Ottawa, Kans.; no oil of lemon; illegal.

The following substances have been recently examined:

No. 2696.—"Adora Hair Dressing"; mfr., J. C. Smith Barber Supply Co., Leavenworth, Kan.; alcohol not declared by manufacturers. Found to be largely wood alcohol and volatile oil.

No. 2698.—"Dick's Quinine Hair Tonic"; mfrs., the Topeka Barber Supply Co., Topeka, Kan.; alcohol declared by manufacturers, not over 40 per cent. Preparation was found to contain some glycerine and about 40.5 per cent. alcohol. No quinine was detected.

No. 2854.—"Capo Oil"; mfr., King's Medical Co., New York. "Capo Oil" is guaranteed to grow hair on bald heads; to destroy the microbes of baldness; to restore hair to its natural growth and color; to eradicate dandruff; to be cooling and healing, and to soften and invigorate the hair. The literature on "Capo Oil" is evidently intended to lead the reader to believe that "Capo Oil" is distilled from the capillaries of the necks of horses and buffalo heads. Part of the trade mark is the picture of a buffalo head, printed in red, registered June 15, 1897. Alcohol declared by the manufacturer, 25 per cent. This declaration appears on the wrapper, but not on the bottle. "Capo Oil" is a yellow liquid, containing quinine, wood alcohol and glycerine.

No. 2853.—"Van's Mexican Hair Restorer"; mfr., Dwight T. Sprague & Co., Chicago. Alcohol declared by manufacturer, 0.008 per cent. Declared to restore gray hair, whiskers, mustache and eyebrows to original color; that it is a hair food; that it does not dye the hair; that it kills the dandruff germ; that it stops hair falling out, and that it cools the head and brain. Warranted absolutely free from lead or anything injurious. Found to contain a salt of lead; misbranded.

No. 2852.—"Cranitonic, Scalp and Hair Food." Declared by manufacturer to destroy the microbes of dandruff and baldness, to stop falling hair, to allay all scalp irritation, to make the hair grow and render it soft and lustrous, to be absolutely harmless, and to contain no dye matter or dangerous drugs. The per cent. of alcohol is not declared by manufacturer. Cranitonic was found to contain borax or boric acid and wood alcohol.

No. 2861.—"Prof. Alexis C. Barry's Tricopherous or Medicated Compound." Alcohol declared by manufacturer, 81 per cent. Declared by manufacturer to cure all diseases of the skin and hair. Found to contain alcohol, coloring matter and a fixed oil.

MAINE.—Official Inspections, No. 9.—The report on sweet oil quotes nine samples misbranded, as they contained no olive oil.

VETIVER AND THE OIL.

(Concluded from page 147.)

of the roots of the *audropogon muricatus* is not well ascertained. According to Stenhouse (Ann. der Chemie und Pharm. t. L. p. 157), it contains a hydrocarbon, $C_{18}H_{30}$, and an oxygenated oil. Fr. Fritsche, of Hamburg, has succeeded in extracting from it a ketonic product as well as two sorts of alcohol. He says that side by side with products of a disagreeable odor, oil of vetiver contains substances of a ketonic character, possessing a distinct odor and useful in perfumery. If it is desired to extract these different products the oil of vetiver is treated with ammoniacal derivatives, which give decomposable ketonic products of condensation, then by distillation the ketonic are separated from the non-ketonic products; then they are treated with acids and distilled. It is necessary to use various precautions; the oil must be dissolved in alcohol and its decomposition procured by the employment of an aqueous solution of semi-carbazide in excess. The solution must be left standing for a week, then by distillation the alcohol and the undissolved oil must be separated. There will remain a non-volatile combination of ammoniacal derivatives which acids at the ordinary temperature will decompose. This last operation may also be done under reduced pressure or under a jet of steam. The oil obtained, which appears to be a mixture of several isomers and which melts under a pressure of 10 mm., between 149 deg. and 154 deg. B., is distilled by steam. Analysis gives it the rough formula $C_{18}H_{32}O$.

The same chemist has likewise devised a process for obtaining alcohols adapted to industrial uses; it consists in saponifying the oil freed from ketonic products by the ammoniacal derivatives, then by effecting a practical distillation under reduced pressure. The oil is purified by etherizing it with mono-basic or bi-basic acids yielding ethers slightly volatile or acids which are separated from the non-alcoholic compounds by distillation or by extraction and which are saponified for the purpose of separating the pure alcohol.

It has been possible to study the alcohols thus obtained; they are characterized by the following properties: One of them, under 10 mm. of pressure, boils at 150 to 155 deg. C., and has a density of 0.980 at 15 deg. The other, under 10 mm. of pressure, boils at 174 to 176 deg. C., and has a density of 1.02 at 15 deg. Alcohols extracted from the oil of vetiver have an industrial use already determined—the preparation of perfumery. These investigations are extremely interesting; in point of fact, oil of vetiver is produced in considerable quantities by the French colony at Reunion, whose deplorable economic condition deserves, just as much as that of Corsica, to attract the attention of the governing powers. The high price of this oil restricts its use to high grade perfumery and is an obstacle to its increased consumption; it is therefore obvious that researches calculated to give us more exact information concerning the nature and composition of this oil and as a result to bring about a diminution of its cost of production, ought to be encouraged by all possible means; they ought to be actively prosecuted and to be the object of our constant efforts. It is for this reason that we have sought to make clear the present state of our knowledge of this

excellent perfume and to call the attention of chemists and specialists to this study.—*Translated from La Parfumerie Moderne.*

FATTY OILS, FATS, WAXES, AND SOAPS.

OIL PRODUCTION IN THE ITALIAN AND FRENCH RIVIERA.
J. Slaus-Kantschieder. Chem. Rev. Fett- u. Harz-Ind., 1909, 16, 223-231.

A considerable amount of foreign olive oil is imported into Nice, the bulk coming from Italy and Tunis, and a small proportion from Spain, Turkey, Algiers and Greece. The importations amounted to 8,264,900 kilos. in 1907 as against 11,917,200 kilos. in 1906. The quantities of olive oil exported to various countries from Nice during 1906 and 1907 were as follows:

Exported to—	1906.	1907.
Austria-Hungary	351,000	370,000
Germany	748,000	749,000
Russia	436,000	624,000
England	234,000	206,000
Switzerland	313,000	289,000
Roumania	70,000	123,000
Servia	14,000	21,000
Bulgaria	4,600	5,200

PATENTS.

"HYDROCARBONS WITH ACID FUNCTIONS" (FROM PETROLEUM); USE OF — AS SUBSTITUTES FOR FATTY ACIDS, OILS, FATS, AND SOAPS. C. M. D. Bazin. Fr. Pat. 399,212, April 15, 1908.

It is stated that the "hydrocarbons with acid functions" obtained by treating petroleum with alkali and acidifying the resulting alkaline tar, may be used as substitutes for fatty acids for all technical purposes. Claim is also made for the use of amides, esters and salts of these acids for the same purpose. The acids form soluble soaps with alkalies, and give insoluble salts with alkaline-earth bases (notably alumina). As the latter do not become soft below 120 deg. C. they can be advantageously used in the preparation of solid fats for sizing textile fabrics, etc.—C. A. M.

FAT; PROCESS OF EXTRACTING — FROM AGRICULTURAL AND INDUSTRIAL SUBSTANCES, AND MANUFACTURE OF THE SOLVENT USED IN THE PROCESS. A Guétan and H. Simonin. Fr. Pat. 400,105, May 20, 1908.

Hot or cold neutralized solutions of sulphonated liquid fatty acids are used for the extraction of fat, both in the free state and in the form of calcium or aluminum soaps, etc., from industrial organic substances, such as bone, hides, etc. The solvent may be prepared by treating 10 parts of liquid fatty acids with 1 part of sulphuric acid (65 deg. B.), agitating mixture for 4 hours, decanting the sulphonated product, washing it with salt water, and neutralizing it at a low temperature with a solution of caustic soda.—SOAP OR OTHER WASHING MATERIAL; MANUFACTURE OF PULVERIZED —. O. Lindemann, London. From Gebrüder Körting A. G., Linden, Germany. Eng. Pat. 26,133, Dec. 3, 1908.

A drier soap powder than that made according to the process described in Eng. Pat. 25,276 of 1907, may be prepared by forcing the liquid soap from a container through a pulverizing apparatus and mixing it with superheated steam or highly heated air or gas as it escapes from the pulverizing nozzle. The steam under a pressure of 1 or 2 atmospheres and at a temperature of about 300 degs. C. issues from a chamber surrounding the nozzle.—W. P. S.

SOAP OR SOAP COMPOUND (FOR MAKING COTTON NON-INFLAMMABLE) J. V. J. Hollingworth, Ashton-under-Lyne, Eng. Pat. 717, Jan. 12, 1909.

A soap to render cotton fabrics non-inflammable after washing is prepared by mixing a dry powdered soap (say, 180 parts) with sodium silicate (24 parts), and adding oleic acid previously saponified or made into a dry paste with potassium carbonate (8 parts), glycerin (7 parts) and sodium tungstate (4 parts).—C. A. M.

PATENTS, TRADE MARKS, ETC.



NOTE TO READERS.

This department is conducted under the general supervision of Samuel E. Darby, Esq., Patent and Trade Mark Attorney, 220 Broadway, New York, formerly Chief Clerk and Examiner, U. S. Patent Office. This report of pat-

ents, trade marks, labels and designs is compiled from the official records of the Patent Office in Washington, D. C. We include everything relating to the four co-ordinate branches of the essential oil industry, viz.: **PERFUMES, SOAP, FLAVORING EXTRACTS and TOILET PREPARATIONS.**

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The trade marks illustrated are described under the heading "Trade Marks Applied For," and are those for which registration has been *allowed*, but not yet *issued*. All protests for infringements, etc., should be made promptly to the Commissioner of Patents, Washington, D. C.

All inquiries relating to patents, trade marks, labels, copyrights, etc., will receive Mr. Darby's attention if addressed to

PATENT AND TRADE MARK DEPT.,
Perfumer Pub. Co. 100 William St., New York.

PATENT GRANTED.

936,101.—SOAP-GRANULATOR.—Richard L. Edwards, Jr., Hopatcong borough, N. J., assignor to Hygienic Soap Granulator Company, a Corporation of New Jersey. Filed Jan. 30, 1904. Serial No. 191,303.

5. The soap granulator comprising the shell having the longitudinally depressed bead, the screw threaded follower and stem angular at each end, the toothed spider formed with a socket for the stem, and the studs projecting from opposite faces of the follower and in sliding locking engagement with the longitudinally extending head of the shell, substantially as described.

TRADE MARKS REGISTERED.

75,224.—Tooth-Paste.—Dental Drug Co., Baltimore, Md. Filed November 14, 1908. Serial No. 38,652. Published July 13, 1909.

75,238.—Chemical Washing Powder.—The Warner Chemical Company, Carteret, N. J. Filed October 30, 1908. Serial No. 38,357. Published February 16, 1909.

75,241.—Antiseptic Wash.—Joseph F. Allison, Washington, D. C. Filed May 21, 1909. Serial No. 42,571. Published July 13, 1909.

75,251.—Certain Pharmaceutical Preparations. The H. B. Clafin Company, New York, N. Y. Filed July 28, 1908. Serial No. 36,370. Published January 5, 1909.

75,255.—Medicines and Toilet Preparations.—Mexican Amole Soap Company, Peoria, Ill. Filed January 22, 1908. Serial No. 32,382. Published March 9, 1909.

75,261.—Liquid and Compressed Dentifrice.—Jack Francis Steen, Lyon, France. Filed October 7, 1908. Serial No. 37,868. Published July 13, 1909.

75,262.—Toilet Preparation.—Eleni D. Thomas, New York, N. Y. Filed January 14, 1909. Serial No. 39,911. Published July 13, 1909.

75,269.—Cottonseed Oil. Aspegren & Company, New York, N. Y. Filed May 19, 1909. Serial No. 42,518. Published July 20, 1909.

75,276.—Scouring Soap.—Henry Klein, Elmhurst, N. Y. Filed June 9, 1909. Serial No. 42,922. Published July 20, 1909.

75,303.—Toilet Creams, Cold Cream, Face Powder and Skin Food. The De Meridor Company, Scranton, Pa. Filed April 28, 1909. Serial No. 42,097. Published July 20, 1909.

75,322.—Cottonseed Oil.—Robert B. Brown Oil Company, St. Louis, Mo. Filed February 23, 1909. Serial No. 40,738. Published April 20, 1909.

75,378.—Soap for Laundry Use.—The Procter & Gamble Company, Ivorydale and Cincinnati, Ohio; Kansas City, Kan., and New York, N. Y.

Filed May 24, 1909. Serial No. 42,634. Published July 27, 1909.

75,379.—Soap for Laundry Use.—The Procter & Gamble Company, Ivorydale and Cincinnati, Ohio; Kansas City, Kan., and New York, N. Y.

Filed May 24, 1909. Serial No. 42,635. Published July 27, 1909.

75,381.—Washing Powder.—Roach Brothers, Fort Wayne, Ind. Filed February 23, 1909. Serial No. 40,761. Published July 27, 1909.

75,422.—Hair Tonics.—Nels A. Anderson, Tacoma, Wash. Filed May 24, 1909. Serial No. 42,640. Published August 3, 1909.

75,440.—Mouth Washes and Liquid Dentifrices.—Fritz Kleinsorgen, Elberfeld, Germany. Filed February 28, 1906. Serial No. 17,398. Published August 3, 1909.

75,448.—Cottonseed Oil.—The Procter & Gamble Company, Ivorydale and Cincinnati, Ohio; Kansas City, Kan., and New York, N. Y. Filed June 7, 1909. Serial No. 42,865. Published August 3, 1909.

75,449.—Cottonseed Oil.—The Procter & Gamble Company, Ivorydale and Cincinnati, Ohio; Kansas City, Kan., and New York, N. Y. Filed June 7, 1909. Serial No. 42,866. Published August 3, 1909.

75,450.—Cottonseed Oil.—The Procter & Gamble Company, Ivorydale and Cincinnati, Ohio; Kansas City, Kan., and New York, N. Y. Filed June 7, 1909. Serial No. 42,867. Published August 3, 1909.

75,451.—Cottonseed Oil.—The Procter & Gamble Company, Ivorydale and Cincinnati, Ohio; Kansas City, Kan., and New York, N. Y. Filed June 7, 1909. Serial No. 42,868. Published August 3, 1909.

75,452.—Soap.—Emil A. Reinkendorff, Canton, Ohio. Filed January 6, 1909. Serial No. 39,745. Published August 3, 1909.

75,455.—Powder for Cleaning Brushes.—S. E. Howard's Son & Co., New York, N. Y. Filed December 16, 1908. Serial No. 39,354. Published August 3, 1909.

75,494.—Beeswax, Both White and Yellow.—The Will & Baumer Company, Syracuse, N. Y. Filed June 27, 1905. Serial No. 9,168. Published April 28, 1908.

75,525.—Cleaning and Polishing Compound.—Emery Bronte Brannen, New York, N. Y. Filed June 17, 1909. Serial No. 43,064. Published August 10, 1909.

75,536.—Cleaning Compound.—Gribben & Keyser, Moundsville, W. Va. Filed June 14, 1909. Serial No. 43,000. Published August 10, 1909.

75,546.—Laundry Soap.—The Standard Soap Company, West Berkeley, Cal. Filed June 19, 1909. Serial No. 43,120. Published August 10, 1909.

TRADE MARKS APPLIED FOR.

29,474.—Salomon Hudes, New York, N. Y. Filed August 19, 1908.—Perfumery.

31,788.—Joseph Biechele, Canton, Ohio. Filed December 17, 1907.—Soap.

32,601.—T. H. Grossmith, New York, N. Y. Filed February 6, 1908.—Fruit oils for food flavoring purposes, fruit syrups for food flavoring purposes and extracts for food flavoring purposes.

33,025.—National Grocer Company, Chicago, Ill. Filed February 27, 1908.—Flavoring extracts and essences, cottonseed oil used as a salad oil, olive oil, etc.

(Concluded on page 153.)

FOREIGN CORRESPONDENCE AND MARKET REPORT

BRAZIL.

Vice-Consul D. P. DeYoung, of Santos, reports that there is undoubtedly a great demand for all sorts of massage cream and massage soap in that part of Brazil, where many people use such toilet articles daily. The vice-consul's details follow:

"The per capita consumption must be greater than in the United States, as the people use considerably more toilet articles than do those of northern climes. A great deal of the business is done in French lines, and therefore circulars and correspondence in the French language would probably answer. The language of the country, however, is Portuguese, Spanish being also read and understood by the majority of the people.

"A good way to introduce such a product would be by distributing circulars printed in Portuguese in all the homes of the principal cities, together with some samples. After having done this, place the articles in the hands of an importer in each city, who will regulate his orders by the demand of the public. There could be no better method of getting the goods started, and the expense of so doing would be comparatively small. The cost of printing and the hiring of boys to circulate them would be a very small item, and it is sure of results. It would be better still to send out a man, not necessarily experienced in the business, but active and reliable, to see that such advertising matter is distributed and at the same time agencies established in the principal cities. This could be done by one man in a trip to all the districts of South America, at a very small expense, and the returns thereon be far beyond expectations."

FRANCE.

GRASSE.—The jasmin crop is now finished and proves to be one-third less than normal. The months of July and August were very dry and during September copious rain fell, and such meteorological conditions always affect the crop injuriously.

HOLLAND.

We are informed that recently a serious outbreak of fire occurred at the well-known Oranje factory, ten miles outside Amsterdam. Although a great deal of damage was done, and much valuable stock was burned, the works were able to quickly resume business, and very little delay has been caused in the execution of orders. A curious example of official red tapeism is recorded in connection with this fire. A fire brigade about eight or nine miles away declined to answer the fire call on the ground that the fire was outside the limits of their jurisdiction!

RUSSIA.

In answer to an inquiry, Consul-General John H. Snodgrass, of Moscow, reports as follows concerning the outlook for American toilet goods in Russia:

"Russia offers a most inviting field for various kinds of toilet preparations, but they must be thoroughly advertised before they become acceptable, the French and Germans being notable examples of the successful exporters who have brought their goods to the attention of the Russians through the medium of the press and other forms of advertising. The higher grades of cosmetics are imported principally from France, Germany, England, and the United States, in the order named. In 1908 the importation of such goods aggregated \$1,154,115, against \$1,427,065 for 1907; while the exports thereof amounted to \$52,530 in 1908, against \$62,830 in 1907. Russia manufactures toilet preparations on a large scale, the principal factories being located at Moscow, St. Petersburg, Warsaw, and Riga.

"In order to compete successfully with European countries the American manufacturer must give long credits to reliable dealers, otherwise all efforts to extend any line here will prove unsuccessful. The usual credits are six months for large concerns and nine months for the smaller ones.

"The rate of duty is as follows: Cream, \$8.65 per 36 pounds, including the carton, tissue paper, and direction slips, if packed single; when shipped in dozen lots the glass bottles and cardboard boxes containing the goods are included in the duty. On soap the duty is \$5.56 per 36 pounds, including wrapper and cartons."

A list of houses that would be likely to be interested in American products, and with which correspondence can be carried on in German, together with the address of an advertising agent for Russia, transmitted by the consul-general, are on file in the Bureau of Manufactures.

Special Agent Julien L. Brodé, writing from St. Petersburg, reviews the seed-crushing industry of Russia:

"There are 7 oil mills at Odessa, with an aggregate of 70 presses. Each press is capable of producing 720 gallons per day (24 hours). The mills press several kinds of seed, but mostly sunflower seed and linseed. At Novorashis there are about 15 mills, and it is here that most of the sunflower seed is crushed, since this point is in the district where most of the seed is produced.

"The manager of the largest mill at Odessa told the writer that this coming season, owing to the high prices demanded for linseed and the scarcity of the sunflower seed, they would doubtless crush considerable soya beans. It is reported that there will be a large crop of these beans in Manchuria this season. The crop is thought to be at least 540,000 tons, which is over 50 per cent. larger than last year. The price asked for the new crop soya bean is about \$21.50 per short ton f. o. b. China ports. The freight rate from China ports to Odessa is \$4.28 per short ton. The beans give 12 per cent. oil."

THE DOMESTIC MARKET.

Principal interest has centered in peppermint, lavender and rose oils. The peppermint situation has undergone no marked change, as dealers are disinclined to trade except with regular buyers, and then only in small quantities. The tug-of-war between the producers and consumers,

through the medium of dealers, is still on, but there seem to be indications of weakness on the part of the producers that make it likely that the market will at least go no higher.

Good grades of lavender are high in price, as much as \$2.75 being asked for the best. Lower qualities are in proportion, and the probabilities are that the advance has not yet stopped.

Reports from Bulgaria indicate that the oil still remaining in the hands of distillers, in three districts, is being sold at from 4.20 fr. to 4.30 fr. per muscal (208 muscals to 1 kilo). This would indicate increasing firmness of the market with a consequent stiffening, or at least, retention of present quotations.

BEANS.

The reduced crop of Bourbon beans of all varieties, together with their increasing consumption, has served to put them up to their present high price. In all the islands but the Seychelles, the crop has been poor, the total not

exceeding 175,000 kilos (385,000 lbs.), or nearly 1-3 less than normal.

France has raised the tax on vanillin, and on this account the consumption of beans is likely to increase, with a further rise in price.

Mexican beans are relatively weak, though the rise in bourbons will undoubtedly increase the demand for this variety. The crop is also short, and poorer in quality.

SOAP MATERIALS.

Tallow, city, .06½ (hdds.); country, .06.

Grease, brown, .04½@.04½; yellow, .05½@.05½.

Cottonseed Oil, crude, tanks, 35@36; summer yellow, prime, 41½@42.

Cocoanut Oil, Cochin, .09; Ceylon, .08.

Olive Oil, yellow, \$1.40; denatured, 85@1.00.

Olive Oil, Fruits, prime, .07.

Palm Oil, Lagos, .06½; red, prime, .05½.

Chemicals, borax, .05; caustic soda, 80 p. c. basis of 60 p. c. \$1.90.

Rosin, per 280 lbs., 4.25@7.25.

Almond, Bitter.....per lb.....	\$3.50	Geranium, Turkish	\$2.50	Savin	\$1.40
" " F. F. P. A.....	4.50	Ginger	4.50	Spearmint	1.75
" Artificial .....	.75	Gingergrass	1.35	Spruce .....	.45
" Sweet, True.....	.55-60	Hemlock .....	.55	Tansy	3.50
" Peach-kernel	30-35	Juniper Berries, twice rect....	1.25	Thyme, red, French.....	1.10
Amber, Crude.....	.13	Kananga, Java	4.00	" white, "	1.30
" Rectified .....	.20	Lavender, English	7.00	Vetivert, Bourbon	8.50
Anise	1.15	" Cultivated	3.00	" Indian	42.00
Aspic (Spike).....	1.35	" Fleurs, 28-30%.....	2.25-2.75	Wintergreen, artificial .....	.38
Bay, Porto Rico.....	3.50	Lemon .....	.85	" genuine	4.25
Bay	2.10	Lemongrass .....	.85	Wormwood	5.00
Bergamot, 35%-36%.....	4.10	Limes, expressed	2.00	Ylang-ylang	50.00-65.00
Birch (Sweet).....	1.60	" distilled .....	.80		
Bois de Rose, Femelle	4.50	Linaloe	2.90		
Cade .....	.20	Mace, distilled .....	.80		
Cajeput .....	.53	Mustard, natural	3.00-4.00		
Camphor .....	.12	" seed, gen.....	8.50		
Caraway Seed	1.30	" artificial	2.00		
Cardamon	18.00	Myrrhe, rect.....	.12		
Carvol	2.45	Neroli, petale.....	80.00-90.00		
Cassia, 75-80%, Technical.....	1.00	" artificial	17.00		
" Lead free	1.25	Nutmeg .....	.90		
" Redistilled	1.60	Orange bitter	2.25		
Cedar, Leaf .....	.50	" sweet	2.15		
" Wood .....	.25	Origanum .....	.40		
Cinnamon, Ceylon.....	6.50-12.00	Orris Root, concrete	3.50-4.50		
Citronella .....	.27	" " absolute	28.50-32.00		
Cloves .....	.80	Patchouly	4.75-5.50		
Copaiba	1.25	Pennyroyal	1.90		
Coriander	6.00-13.00	Peppermint, W. C.....	1.90-2.00		
Crotton .....	.75	Petit Grain, American.....	4.50		
Cubeb	2.50	" " French	6.00		
Erigeron	1.50	Pimento	2.25		
Eucalyptus, Australian, 70%.....	.50	Rose	(oz.) 5.00-5.50		
" American .....	.60	Rosemary, French.....	.80		
Fennel, Sweet	1.20	" Trieste .....	.70		
" Bitter .....	.75	Safrol .....	.50		
Geranium, African	4.00	Sandalwood, East India.....	3.50		
" Bourbon	3.50	Sassafras, artificial .....	.35		
" French	11.00	Sassafras, natural .....	.60		

BEANS.

Tonka Beans, Angostura..... 1.25

Surinam

Para

Vanilla Beans, Mexican..... 3.00-5.00

" " " Cut

" " Bourbon

" " Tahiti

SUNDRIES.

Ambergris, black

(oz.) 20.00

" gray

" 25.00

Civet, horns

1.75-1.85

Cologne Spirit

2.64-3.25

Cumarin

3.30

Heliotropine

1.70

Musk, Cab, pods

(oz.) 8.00

" " grain

" 15.00

" Tonquin, pods

" 18.00

" " grain

" 22.00

" Artificial, per lb.....

1.50

Orris Root, Florentine, whole

.10

Orris Root, powdered and

granulated

.13

Tale, Italian

.01½-.01¾

Terpineol

35-45

Thymol

1.70

Vanillin

(oz.) 33-35

TRADE MARKS APPLIED FOR.

(Concluded from page 153.)

- 33,655.—Western Grocer Company, Marshalltown, Iowa. Filed March 26, 1908.—Flavoring extracts and essences, olive oil, etc.
- 38,606.—Rockwood Chemical Company, Boston, Mass. Filed November 12, 1908.—Hair tonics.
- 39,066.—Eleto Company, New York, N. Y. Filed December 3, 1908.—A liquid dentifrice for use on a tooth brush for the purpose of cleaning and preserving the gums and teeth, and a liquid antiseptic for use both externally and internally.
- 39,368.—Whittemore Brothers & Co., Cambridge, Mass. Filed December 16, 1908.—A preparation for cleaning and renewing leather and similar goods.
- 39,467.—J. Ernest Brooke, Antioch, Ill. Filed December 21, 1908.—Lotions for diseases of the skin, scalp and blood.
- 41,180.—A. Musica & Son, New York, N. Y. Filed March 13, 1909.—Lucca olive oil.
- 42,066.—The Owl Drug Company, San Francisco, Cal. Filed April 27, 1909.—Salves, lotions, face creams, fingernail gloss, etc.
- 42,157.—Colgate & Company, Jersey City, N. J., and New York, N. Y. Filed May 1, 1909.—Liquid and powdered perfumes and toilet waters.
- 42,379.—Charles Walter Blackburn, Petaluma, Cal. Filed May 12, 1909.—Hair dye.
- 42,421.—National Grocer Company, Detroit, Mich. Filed May 14, 1909.—Flavoring extracts and essences.
- 42,475.—Lee B. Jordán, New Orleans, La. Filed May 17, 1909.—Flavoring extract.
- 42,638.—The Scudders-Gale Grocer Company, St. Louis, Mo. Filed May 24, 1909.—French olive oil.
- 42,913.—Maphis Chemical Company, Inc., Strasburg, Va. Filed June 9, 1909.—Cream dentifrice.
- 42,962.—Mt. Clemens Mineral Springs Water Company, Mount Clemens, Mich. Filed June 11, 1909.—Bathing salt.
- 43,115.—Colgate & Co., Jersey City, N. J., and New York, N. Y. Filed June 19, 1908. (Used ten years.)—Soaps for toilet, laundry, shaving and household use and soap powders.
- 43,142.—Joel F. Shipley, Boggy Depot, Okla. Filed June 21, 1909.—(Which consists of my portrait.)—Soap.
- 43,202.—Sharp & Dohme, Baltimore, Md. Filed June 23, 1909.—An antiseptic powder.
- 43,312.—Karol Gruszka, Chicago, Ill. Filed June 28, 1909.—Mouth washes, etc.
- 43,358.—Edwin Cudlipp, New York, N. Y. Filed July 1, 1909.—Mouth wash.
- 43,372.—William H. J. Smith, Buffalo, N. Y. Filed July 2, 1909.—Tooth paste, hair tonic, face cream, toilet water and toilet powder.
- 43,385; 43,386.—Young Bros., Inc., Seattle, Wash. Filed July 3, 1909.—Flavoring extracts.
- 43,486.—Austin Nichols & Co., New York, N. Y. Filed July 12, 1909.—Italian olive oil.
- 43,491.—Robt. A. Jewett, Boston, Mass. Filed July 13, 1909.—A paste soap and soap for cleansing and scouring purposes.
- 43,602.—The M. & J. Schnable Co., Lafayette, Ind. Filed July 17, 1909.—Soap.
- 43,764.—Batchellor Importing Company, New York, N. Y. Filed July 24, 1909.—Toilet powders and bath powders.
- 43,823.—Cohocton Soap Company, Cohocton, N. Y. Filed July 27, 1909.—Powdered soap.
- 43,859.—Griggs, Cooper & Co., St. Paul, Minn. Filed July 28, 1909.—Flavoring extracts.
- 43,902.—The Procter & Gamble Co., Cincinnati, Ohio. Filed July 31, 1909. (Used ten years.)—Soap for toilet, laundry and general purposes.
- 43,907; 43,908.—The Procter & Gamble Co., Cincinnati, Ohio. Filed July 31, 1909. (Used ten years.)—Soap for laundry use.
- 43,916.—National Toilet Company, Paris, Tenn. Filed

July 31, 1909. (Used ten years.)—A rouge face powder.

43,922.—The S. R. Feil Company, Cleveland, Ohio. Filed July 31, 1909.—Perfumed bath powder.

44,004.—Charles M. Athey, Baltimore, Md. Filed August 6, 1909.—Face and scalp lotions.

44,042.—Burckhardt & Co., Cincinnati, Ohio. Filed August 9, 1909.—Soap.

44,075.—Joseph Palazzolo, New York, N. Y. Filed August 11, 1909.—Perfumery.

TRADE MARK DECISION.

This is an appeal from the decision of the Examiner of Trade Marks refusing to register the mark shown in appellant's drawing as a trade mark for talcum powder and tooth paste.

The mark of appellant consists of the word "Amulet" printed in ordinary type diagonally across a shield.

Registration of the mark was refused for the reason that it includes the word "Amulet," which is the distinctive feature of appellant's name and is not written, printed, impressed, or woven in any particular or distinctive manner. The holding of the Examiner is in accord with the ruling of the Court of Appeals of the District of Columbia in Kentucky Distilleries & Warehouse Company vs. Old Lexington Club Distilling Company (135 O. G., 220; 31 App. D. C., 223) and with the decisions of the Commissioner in ex parte Union Carbide Company (135 O. G., 450) and ex parte The Champion Safety Lock Company, (143 O. G., 1109). In the case first cited the court said:

"There are several provisions of the statute, which, we think, forbid the registration of the mark in question. Section 5 of the act of Congress of February 20, 1905, among other things, provides:

"That no mark which consists merely in the name of an individual firm, corporation, or association, not written, printed, impressed, or woven in some particular or distinctive manner or in association with a portrait of the individual, or merely in words or devices which are descriptive of the goods with which they are used, or of the character or quality of such goods, or merely a geographical name or term shall be registered under the terms of this act."

"It will be observed that the trade name here sought to be registered is almost a reproduction of the corporate name of the applicant. In fact, it seems probable from an examination of the record in the case, that the corporate name of the appellee company was derived from the mark sought to be registered, since "Old Lexington Club" was a name applied to liquor distilled and sold by the predecessors in business of appellee.

"Appellant contends that its firm-name is 'The Amulet Chemical Company,' and that the word 'Amulet' is not its firm-name, but merely constitutes one word of that name and without the other words is meaningless so far as it identifies said firm. In reply to a similar contention made in the case of ex parte The Champion Safety Lock Company, supra, I stated:

"It is urged by the appellant that these cases do not apply, for the reason that the word 'Champion' forms a smaller portion of the name of the applicant than did the marks in question in the cases above cited. The word 'Champion,' however, forms substantially the name of the applicant, and as it is not written in any distinctive manner the case falls clearly within the ruling of the decisions cited.

"Appellant further contends that the word 'Amulet' is 'printed in a particular manner in connection with a heraldic device,' and is therefore registrable under the law. An examination of the mark shows that the word 'Amulet' is printed in ordinary type and not in a particular or distinctive manner, as required by the statute. The fact that the word is associated with other features in the mark does not remove it from the prohibition contained in section 5 of the Trade Mark Act.

"The decision of the Examiner of Trade Marks is affirmed."—Decision by Commissioner of Patents.

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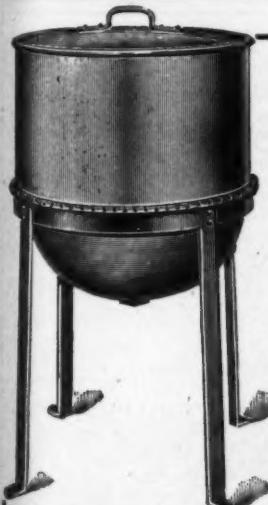
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